



Austin Light Rail
Frequently Asked Questions:
On Street Light Rail Options

Date:
May 15, 2023

Transforming Transit Together

Introduction

On-Street Light Rail Transit

Since Austin’s voters approved Proposition A (Prop A), the dedicated property tax to support Project Connect, the Austin Transit Partnership (ATP) has worked diligently to develop its Light Rail Implementation Plan. While ATP’s revenue source was dedicated to ensure stability and predictability, the planning process has faced challenges with respect to cost increases driven by strong inflationary pressure, rising real estate prices and scope refinement.

In light of these challenges, ATP has continued detailed technical analysis as well as engagement with key stakeholders and the community to reassess options for a Light Rail Implementation Plan that can be delivered within our committed financial resources, and which continues to honor the goals and values of Austin’s voters.

ATP developed five options for the core light rail system to seek feedback from the Austin community. Three of these five options developed include operating the light rail transit vehicles (LRVs) entirely on-street with other modes of traffic (autos, pedestrians, bicycles and buses). This FAQ report is intended to respond to many questions and comments received during our community engagement about how light rail would operate at the street level and any associated opportunities and challenges. Some key topics include: traffic impacts, local access, light rail service reliability, and customer experience within the context the urban realm.



Light Rail Core System Options

Introduction

How does street level light rail transit function?

Many light rail systems in the US and internationally operate successfully on the street, including through dense urban environments and downtown areas. Street level light rail transit consist of light rail vehicles (LRVs) operating in dedicated lanes with light rail tracks embedded in the pavement. The LRV does not interface with other modes of traffic (autos, pedestrians, bikes, buses) along the route except at signalized intersections. The signalized intersections for light rail transit consists of dedicated signal heads for the LRV that allow for the safe passage of the vehicles through the intersections.

On-street light rail systems consist of stations on the street level along the light rail tracks. Being at street level provides for enhanced accessibility of the system to the users and aids in easy transfers, for the users of the system, to other modes of travel or transit.

Some examples of street running light rail systems:

- Denver, CO
- Dallas, TX
- Long Beach, CA
- Minneapolis-St. Paul, MN
- Phoenix, AZ
- San Diego, CA
- Sydney, Australia
- Copenhagen, Denmark



Frequently Asked Questions

Question 1: How can on-street light rail impact or contribute to customer experience and the public realm?

When designed with clear urban design objectives, on-street light rail can be a powerful and positive contributor to a vibrant public realm, supporting active mobility, enhancing street life, and activating local businesses.

One of the benefits of on-street is the increased accessibility of the transit system. Contemporary light rail vehicles are designed with low interior carriages that are close to the ground, and station platforms can be designed to have a seamless connection to the adjacent sidewalk and pedestrian networks, providing universal access without the use of elevators or wheelchair ramps. In addition, the visibility and proximity of the light rail system in the highest activity center of the city, provides a welcoming invitation to new riders of the system and reduces barriers to transit use.

This seamless connectivity to the overall pedestrian network can enhance activity, in general, on the street and create a “virtuous cycle” in the urban realm – enhanced pedestrian spaces, with connection to high-capacity transit, increases local pedestrian traffic on the street, both at stations and on rail corridors, which in turn supports adjacent retail and small business activity, which then continues to attract increased and sustained pedestrian activity over time.

On-street light rail also presents opportunities for partnerships with adjacent property owners to create more generous public spaces around light rail stations to create additional urban design and mobility amenities, including outdoor seating, street trees and landscape elements to improve local climatic conditions, enhanced cycling and micro-mobility infrastructure, and public art.



Guadalupe Street at UT Austin 'The Drag'

Frequently Asked Questions

Question 2: Will local access to garages, driveways and businesses be maintained in the on-street options through downtown?

Yes, vehicular access to garages, driveways and businesses will be maintained next to the light rail transitway as illustrated in the picture below; an example configuration for on-street light rail along Guadalupe Street. In fact, access to some local destinations or parking garages may improve with through-traffic being moved to other streets. One special case may include the light rail option along 3rd Street with a station located between Congress Avenue and Colorado Street, which could include design concepts for a pedestrian and transit plaza at the Congress Avenue station that would close alley and driveway access within that block.



Guadalupe Street at 4th Street / Republic Square - Looking Northwest)

Additionally, beyond downtown most of the light rail system is proposed to be at street level. ATP will work with stakeholders and businesses with garages and driveways along the planned light rail system, to clearly understand the access characteristics and unique needs for each adjacent property. ATP will study any potential impacts to these properties with the introduction of the light rail system, and coordinate with any impacted property owners to develop solutions to minimize or mitigate any access impacts.

Frequently Asked Questions

Question 3: How can traffic impacts be managed with light rail operating at the street level?

Many light rail systems in the US and internationally operate successfully on the street, including through dense urban environments and downtown areas (e.g., Denver, Dallas, Houston, San Diego, Phoenix, Salt Lake City, Minneapolis, and more). The on-street light rail options presented allow the trains to travel in dedicated lanes to remain clear of vehicular traffic to provide for frequent, reliable, and efficient transit service.

Over the next decade, the downtown street network will be impacted by development growth as well as key projects, such as the I-35 Capital Express Central project, Convention Center expansion, and Austin Light Rail. The City of Austin is taking this opportunity to review the downtown grid and proactively plan for these changes, improve the operations of the network, and optimize access for all modes. The City is studying the transportation connections to, from, and within downtown holistically as part of the Austin Core Transportation (ACT) Plan. The ACT Plan will include recommendations and an implementation plan for improvements to the entire downtown street network.

Additionally, The City's Transportation and Public Works Department has been closely coordinating with Austin Transit Partnership to evaluate the on-street light rail options and their impact to downtown transportation network operations. Preliminary traffic analysis findings include:

- When considered in conjunction with the I-35 project along the eastern edge of downtown, overall vehicular capacity into and out of the downtown area will not substantially decrease with any of the light rail options. Strategies to manage vehicular capacity may include two-way conversion strategies, such as along Guadalupe and Lavaca Streets.
- Local access will be maintained to properties along 3rd, Trinity and Guadalupe Streets. One exception could include a design option for the block where the light rail station may be located along 3rd Street between Colorado Street and Congress Avenue to create a pedestrian and transit plaza.

Frequently Asked Questions

Question 3, Continued:

Preliminary traffic analysis findings (continued):

- In review of trips to and from downtown, most drivers are not traveling east-to-west or west-to-east across the length of downtown. For example, approximately 80% of vehicle trips coming from IH-35 and 15th street go to destinations east of Guadalupe Street.
- Of the on-street light rail options, an option with a recommended crossing of Lady Bird Lake at Guadalupe/ S. 1st Street has more impacts at Cesar Chavez Street than a Trinity Street/ Waterfront crossing.

Mitigation strategies to manage downtown transportation impacts include:

- Utilizing smart and adaptive signal and train control techniques/technologies allowing traffic signals and trains to communicate and synchronize.
- Reorganizing other downtown streets via the ACT Plan to maximize influence of the new capacity provided by the I-35 Capital Express Central improvements.
- Learning from peer cities with on-street light rail operations in downtown environments to employ design principles to support operational success.

Next steps for continued analysis include:

- The ACT Plan will recommend the organization of downtown streets and their functions in response to I-35 and Project Connect, in order to maximize people throughput, including pedestrian, bicycle and local bus services into, out of, and throughout downtown. The ACT Plan is anticipated to be complete in Summer of 2023, and will be inclusive of the light rail option selected.
- ATP will complete a traffic analysis for the light rail option adopted as part of the updated Light Rail Implementation Plan as part of the project development and environmental analysis process. This analysis will include a comparison of build alternative (with light rail) against a no-build alternative (without light rail) and these results will be published for community review and input as part of the Draft Environmental Impact Statement.

Frequently Asked Questions

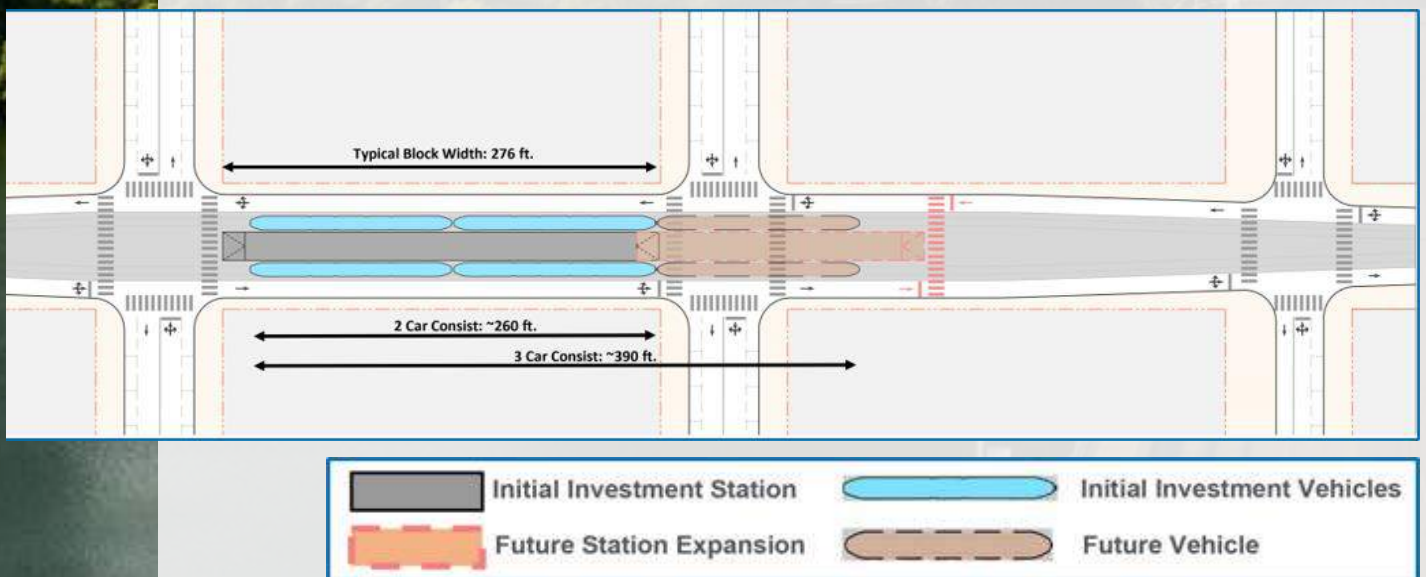
Question 4: How will trains move reliably from station to station?

Key characteristics of the light rail that will contribute to reliable and efficient transit service include:

- The light rail train will be in dedicated lanes not shared with regular traffic.
- All track crossings (vehicle and pedestrian) will be signalized and synchronized with the train control signaling system to prioritize movements of the train to advance from station to station without stopping at red lights.

Question 5: Does the downtown street grid constrain future light rail system capacity?

The light rail stations can meet ridership demand within the constraints of city block lengths downtown for the core light rail system and even future extensions funded by the Prop A revenues. System expansion beyond the limits funded by Prop A may require extension of the station platforms beyond the existing block lengths, which could be accommodated in the future with closure of through traffic movements at low volume streets such as 14th Street at Guadalupe, Colorado Street at 3rd Street and 2nd Street at Trinity (not currently a through street).

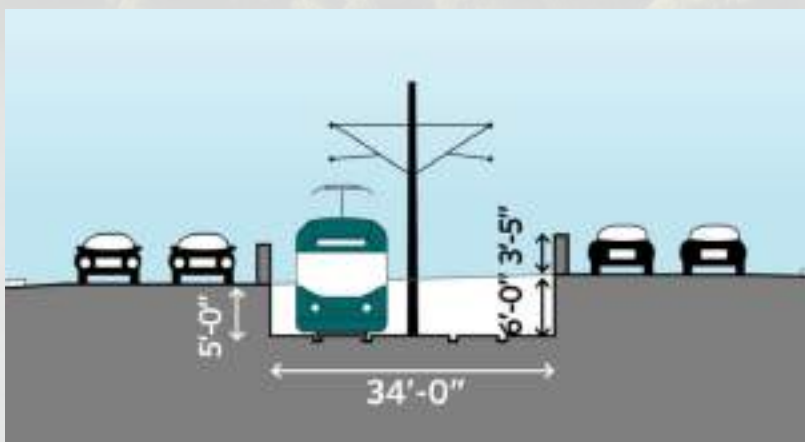


Typical On-Street Station Expansion

Frequently Asked Questions

Question 6: There are hills in Austin. Can the trains work on sloping streets?

The light rail alignment along Guadalupe may require a depressed (lowered) section of the roadway from 7th Street to 9th Street along Guadalupe, because of a hill that may be too steep for light rail operations, depending on the light rail vehicle selected. The lowered section (roughly 5 to 6 feet deep) would prevent through-traffic along 8th Street to cross Guadalupe, meaning drivers traveling along 8th Street would have to turn on Guadalupe Street rather than travel straight across Guadalupe Street. An illustration of the concept is shown below and would continue to be refined as design advances.



SECTION B-B'

Cross-section of trench concept

Frequently Asked Questions

Question 7: Are on-street light rail options safe?

All of the light rail options presented for community feedback can be designed and managed to operate safely as proven systems currently in operation all over the country and the world. All light rail projects, based on their complexity with other modes moving through a city such as pedestrians, cyclists, automobiles, buses, etc. will be subject to risk analysis, safety reviews and must be safety-certified before operations.

Question 8: What would happen to the bikeway if light rail is located on 3rd Street?

The protected bike lanes may be relocated and reconstructed on 4th Street if light rail is located on 3rd Street. Design concepts and alternatives will be coordinated with the community as part of the project development and design process.

Question 9: Will the light rail be noisy and disruptive?

Operation of the light rail can cause noise. However, light rail is traditionally quieter than commuter rail (like CapMetro's Red Line) or freight rail because it is lighter in weight and all-electric. The noise is less noticeable in dense urban environments with existing background noise (like cars, construction, live music, etc.). As light rail designs move forward, noise studies will be completed as required in the NEPA process. These studies will identify potential impacts and solutions that will be shared with the community.